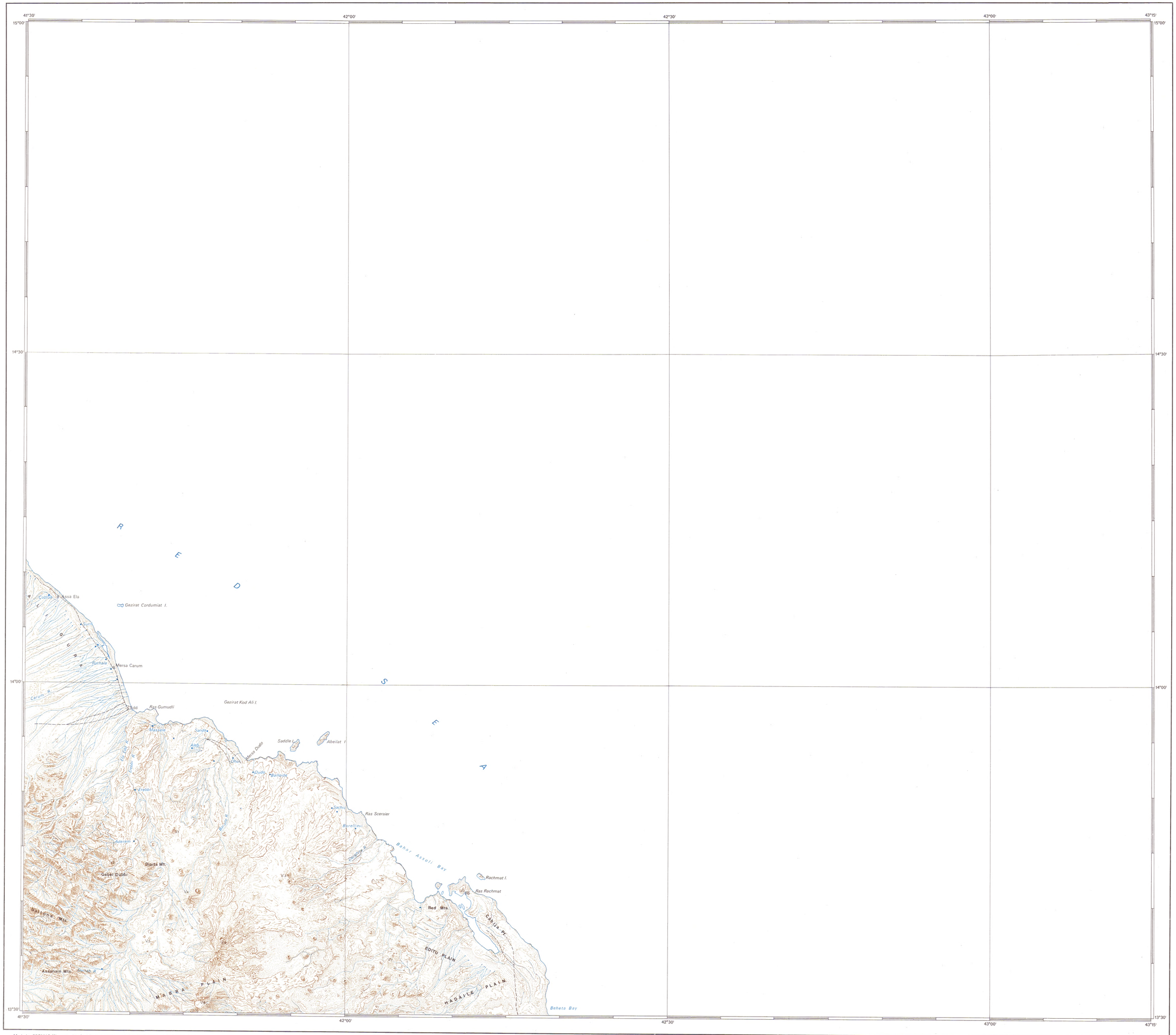
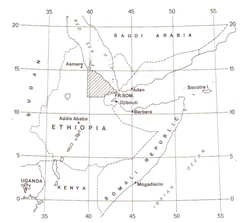
MOBIL PETROLEUM ETHIOPIA INC.
ESSO EXPLORATION INC.
GEOMAP.

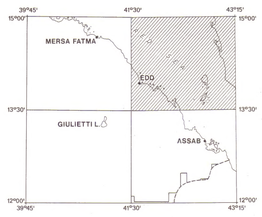
TOPOMORPHIC MAP OF NORTHERN AFAR

ETHIOPIA

SHEET 1
EDD







UNIVERSAL TRANSVERSE MERCATOR PROJECTION - (U.T.M.)
INTERNATIONAL SPHEROID
(meters)

φo = 0° (Equator)
CM = 41°30' E.G.

TN = True North
MN = Magnetic North
GN = Grid North

At sheet center:

GRID CONVERGENCE value: γ = 12'55" E
MAGNETIC VARIATION (presumed and approximate 1968) δ = 0°55'E
Mean annual change: ~ 0°01' East

REFERENCE

- International boundary
- Railway
- Principal road
- Motor track
- Airstrip
- Town
- Village
- Cultivated area
- Water well or spring
- Termal spring
- Trig point
- 125 Elevation point (meters)
- Drainage
- Swamp
- Sand and soil
- Caliche
- Rock
- Volcanic cones
- Lava flow
- Stratoid Lava

Made by GEOMAP (Florence - Italy) with the permission of MOBIL PETROLEUM ETHIOPIA INC. and ESSO EXPLORATION INC.

GEOMAP Cartographic Center, Florence Italy, 1968

Constructed from ETHIOPIAN GOVERNMENT aerial photography 1963, 1964, 1965. Based upon aerial radial triangulation controlled through: [4] Map of East Africa [5] G.S.G.S. n° 4355, 1946, scale 1:500.000. [4] Carta Dimostrativa dell' Eritrea e Regioni Adiacenti [5] Istituto Geografico Militare 1934, scale 1:400.000 [4] Carta dell' Africa [5] I.G.M. 1938, scale 1:100.000 [4] Carta dimostrativa [5] I.G.M. 1934 - 1935, scale 1:50.000 e 1:100.000. [4] Carta geologica del Tigrai [5] G. Merla, E. Minucci, 1936, scale - 1:250.000.

MAP COLLECTION
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA
CANADA

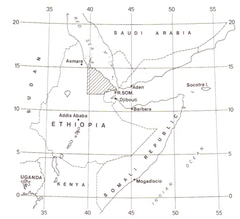
Ethiopia 5
Sheet 1

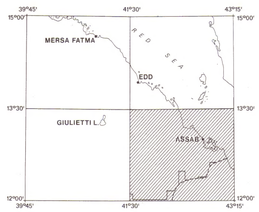
MOBIL PETROLEUM ETHIOPIA INC.
ESSO EXPLORATION INC.
GEOMAP.

TOPOMORPHIC MAP OF NORTHERN AFAR

ETHIOPIA

SHEET 2
ASSAB





UNIVERSAL TRANSVERSE MERCATOR PROJECTION - (U.T.M.)
INTERNATIONAL SPHEROID
(meters)

Φo = 0° (Equator)
CM = 41°30' E.G.

TN = True North
MN = Magnetic North
GN = Grid North

At sheet center:

GRID CONVERGENCE value: γ = 11°35' E
MAGNETIC VARIATION (presumed and approximate 1968) Δ = 0°50'E
Mean annual change: −0°01' East

REFERENCE

- International boundary
- Railway
- Principal road
- Motor trac‹
- Airstrip
- Town
- Village
- Cultivated area
- Water well or spring
- Termal spring
- Trig point
- .125 Elevation point (meters)
- Drainage
- Swamp
- Sand and soil
- Caliche
- Rock
- Volcanic cones
- Lava flow
- Stratoid Lava

Made by GEOMAP (Florence - Italy) with the permission of MOBIL PETROLEUM ETHIOPIA INC. and ESSO EXPLORATION INC.

GEOMAP Cartographic Center, Florence Italy, 1968

Scale 1:250.000

Kilometers 5 0 5 10 15 20 25 — 5 0 5 10 15 Miles

Constructed from ETHIOPIAN GOVERNMENT aerial photography 1963, 1964, 1965. Based upon aerial radial triangulation controlled through: [1]Map of East Africa, G.S.G.S. n° 4355, 1946, scale 1:500.000; [2]Carta Dimostrativa dell' Eritrea e Regioni Adiacenti, Istituto Geografico Militare 1934, scale 1:400.000; [3]Carta dell'Africa, I.G.M. 1938, scale 1:100.000; [4]Carta dimostrativa, I.G.M. 1934 - 1935, scale 1:50.000 e 1:100.000; [5]Carta geologica del Tigrai, G. Merla, E. Minucci, 1936, scale - 1:250.000.

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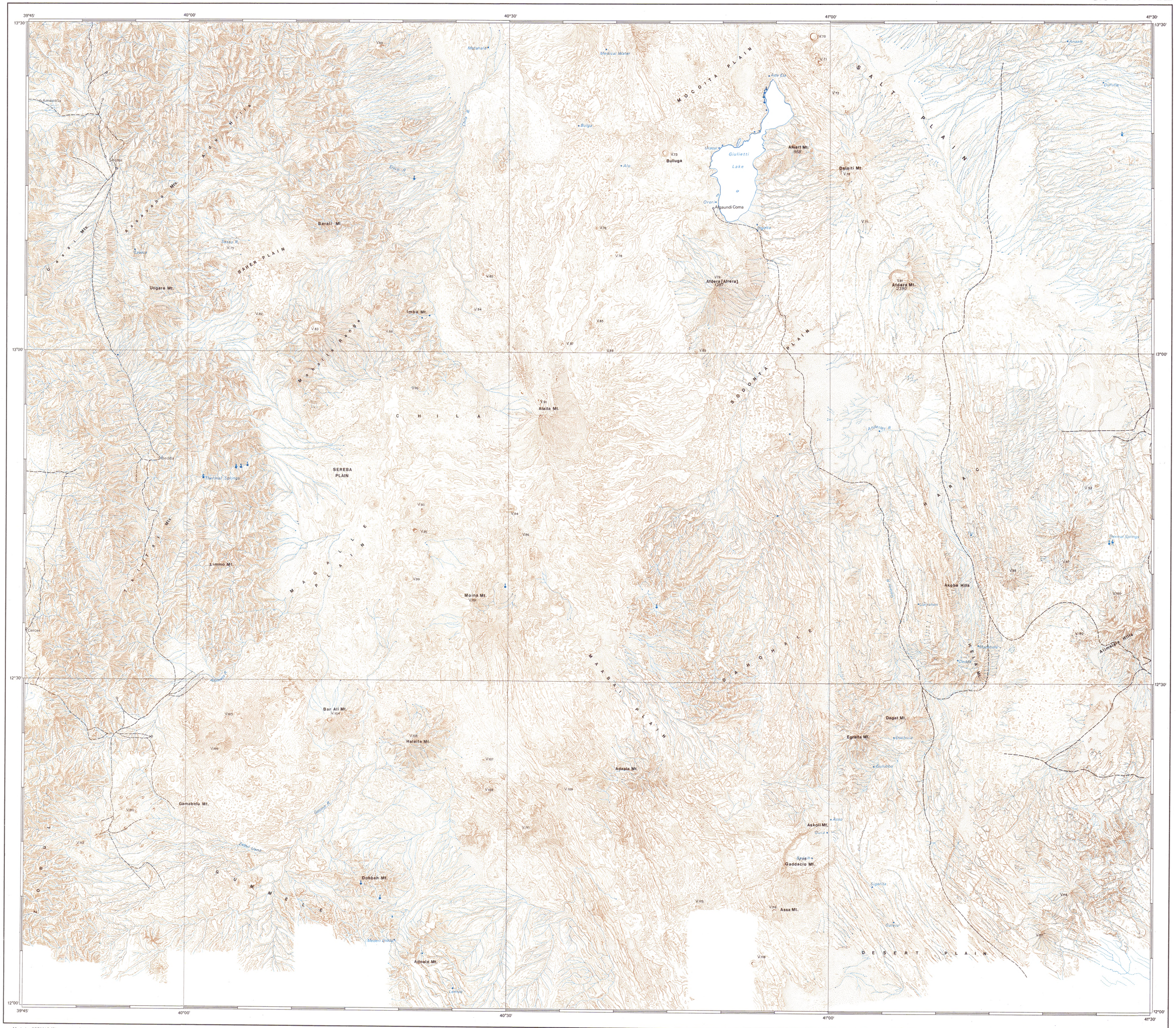
CANADA

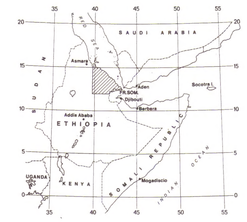
Ethiopia 5
sheet 2

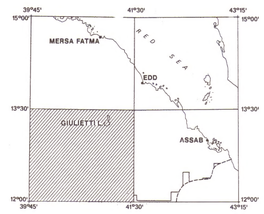
MOBIL PETROLEUM ETHIOPIA INC.
ESSO EXPLORATION INC.
GEOMAP.

TOPOMORPHIC MAP OF NORTHERN AFAR
ETHIOPIA

SHEET 3
GIULIETTI LAKE







UNIVERSAL TRANSVERSE MERCATOR PROJECTION-(U.T.M.)
INTERNATIONAL SPHEROID
(meters)

Φo = 0° (Equator)
CM = 41°30' E.G.

TN = True North
MN = Magnetic North
GN = Grid North

At sheet center:

GRID CONVERGENCE value: γ = 11'35" E
MAGNETIC VARIATION (presumed and approximate 1968) δ = 0°40'E
Mean annual change: +0°0'E'east

REFERENCE

- International boundary
- Railway
- Principal road
- Motor track
- Airstrip
- Town
- Village
- Cultivated area
- Water well or spring
- Termal spring
- Trig point
- 125 Elevation point (meters)
- Drainage
- Swamp
- Sand and soil
- Caliche
- Rock
- Volcanic cones
- Lava flow
- Stratoid Lava

Made by GEOMAP (Florence - Italy) with the permission of MOBIL PETROLEUM ETHIOPIA INC. and ESSO EXPLORATION INC.

Cartographic Center, Florence Italy, 1968

Scale 1:250.000

Kilometers 5 0 5 10 15 20 25 — 5 0 5 10 15 Miles

Constructed from ETHIOPIAN GOVERNMENT aerial photography 1963, 1964, 1965. Based upon aerial radial triangulation controlled through: [1]Map of East Africa" G.S.G.S. n° 4355, 1946, scale 1:500.000; [2]Carta Dimostrativa dell' Eritrea e Regioni Adiacenti" Istituto Geografico Militare 1934, scale 1:400.000; [3]Carta dell'Africa" I.G.M. 1938, scale 1:100.000; [4]Carta dimostrativa" I.G.M. 1934 - 1935, scale 1:50.000' e 1:100.000; [5]Carta geologica del Tigrai" G. Merla, E. Minucci, 1936, scale - 1:250.000.

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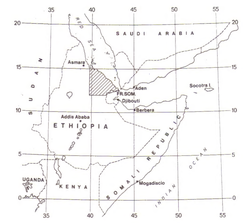
EDMONTON, ALBERTA
CANADA

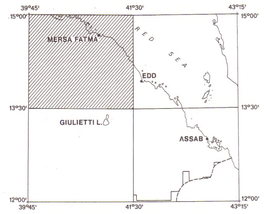
Ethiopia 5
Sheet 3

MOBIL PETROLEUM ETHIOPIA INC.
ESSO EXPLORATION INC.
GEOMAP.

TOPOMORPHIC MAP OF NORTHERN AFAR
ETHIOPIA

SHEET 4
MERSA FATMA





UNIVERSAL TRANSVERSE MERCATOR PROJECTION=(U.T.M.)
INTERNATIONAL SPHEROID
(meters)

φo= 0° (Equator)
CM= 41°30' E.G.

GN TN MN

TN = True North
MN = Magnetic North
GN = Grid North

At sheet center:

GRID CONVERGENCE value: γ' = 12'55" E
MAGNETIC VARIATION (presumed and approximate 1968) δ = 0°45' E
Mean annual change: −0°01' East

REFERENCE

- International boundary
- Railway
- Principal road
- Motor track
- Airstrip
- Town
- Village
- Cultivated area
- Water well or spring
- Termal spring
- Trig point
- 1125 Elevation point (meters)
- Drainage
- Swamp
- Sand and soil
- Caliche
- Rock
- Volcanic cones
- Lava flow
- Stratoid Lava

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Cartographic Center, Florence Italy, 1968

Scale 1:250.000

Kilometers 5 0 5 10 15 20 25 — 5 0 5 10 15 Miles

Constructed from ETHIOPIAN GOVERNMENT aerial photography 1963, 1964, 1965. Based upon aerial radial triangulation controlled through: a "Map of East Africa" G.S.G.S. nr 4355, 1946, scale 1:500.000; b Carta Dimostrativa dell'Eritrea e Regioni Adiacenti Istituto Geografico Militare 1934, scale 1:400.000; c Carta dell'Africa I.G.M. 1938, scale 1:100.000; d Carta dimostrativa I.G.M. 1934 - 1935, scale 1:50.000 e 1:100.000; e Carta geologica del Tigrai G. Merla, E. Minucci, 1936, scale - 1:250.000.

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Ethiopia 5
Sheet 4